

REMARKS

Claims 1-11, 13-23 and 25-27 are pending in the application. Claims 1,13, 14 and 25 have been amended. Claims 12 and 24 have been canceled without prejudice or disclaimer. Reconsideration of this application is respectfully requested.

It is noted with appreciation that the Office Action has indicated that claim 3 would be allowable if rewritten to include all the limitations of the base claim and of any intervening claims.

The Office Action has objected to the specification because the paragraph at line 22 of page 9 refers to co-pending applications by Attorney Docket No. rather than by U.S. Application Nos. This paragraph has been amended by changing the Attorney Docket Nos. to U.S. Application Nos. Accordingly, it is submitted that the amendment obviates the objection to the specification and, therefore, that the objection should be withdrawn.

The Office Action rejects claims 1, 2, 4-7, 14-19, 26 and 27 under 35 U.S.C. 102(b) as anticipated by U.S. Patent No. 6,056,386 to Nohata et al., hereafter Nohata.

This rejection is moot since independent claims 1 and 14 have been amended to incorporate the language of claims 12 and 24, respectively. Since claims 12 and 24 were not rejected under 35 U.S.C. 102(b), it is submitted that the rejection is moot and should be withdrawn.

The Office Action rejects claims 8, 9, 11, 20, 21 and 23 under 35 U.S.C 103(a) as unpatentable over Nohata in view of U.S Patent No. 5,398,054 to Fukazawa et al., hereafter Fukazawa.

This rejection is moot since independent claims 1 and 14 (the parent claims of the rejected claims) have been amended to incorporate the language of claims 12 and 24, respectively. Since claims 12 and 24 were not included in the rejection, it is submitted that the rejection is moot and should be withdrawn.

The Office Action rejects claims 9, 10, 21 and 22 under 35 U.S.C 103(a) as unpatentable over Nohata in view of U.S Patent No. 5,583,547 to Gast et al., hereafter Gast.

This rejection is moot since independent claims 1 and 14 (the parent claims of the rejected claims) have been amended to incorporate the language of claims 12 and 24, respectively. Since claims 12 and 24 were not included in the rejection, it is submitted that the rejection is moot and should be withdrawn.

The Office Action rejects claims 12, 13, 24 and 25 under 35 U.S.C 103(a) as unpatentable over Nohata in view of U.S Patent No. 5,455,608 to Stewart et al., hereafter Stewart.

The present invention is for a method and apparatus for servicing a printing component when mounted in a printing device. Independent claims 1 and 14, which have been amended to incorporate the language of claims 12 and 24, respectively, capture the servicing aspect of the invention.

At page 3 of the specification, Stewart is described as performing a "nozzle health" detection before each print job and recovery procedures based on a fixed threshold. The threshold is basically one nozzle remaining non-firing. If after four tries, the nozzle still remains non-firing, the fixed threshold dictates that the print job be deferred until after the printer is manually serviced. This causes an interruption, leading to an unacceptable loss of printer throughput and productivity.

The present invention solves the “fixed threshold” problem by determining a level of print quality required for a print job. The level of print quality is based on a set of flexible criteria that permits the level to vary so as to allow printing of the job even though the nozzles may not be fully functional. This is captured by the determining step of claim 1 and the processor of claim 14.

Nohata, like Stewart, uses a fixed threshold, namely the threshold values Nb, Ny, Nm and Nc. Nohata uses one set of threshold values for normal printing and another set of threshold values for economy printing. In either case, Nohata’s thresholds are fixed.

At page 8 of the Office Action, the Examiner indicates that it cannot be seen how basing the level of print quality on flexible criteria “distinguishes applicants’ invention from that of Nohata since the set quality of Nohata is based on a desired resolution and print coverage determined by a user which are similar criteria as that defined by applicants as being flexible. See column 3, lines 44-51 and column 17, lines 20-35 of Nohata”.

Neither of the cited passages supports a teaching that a level or threshold determination is made by the print device (claim 1) or the processor (claim 14) based on a set of flexible criteria. The column 3 passage refers to a previously known printer (not taught by Nohata) that uses fixed thresholds for normal and economy print modes (see lines 32-44 of column 3). The column 17 passage states that all of Nohata’s nozzles are used in a normal print mode and half are used in an economy print mode. In either case, the thresholds are fixed and entered into the ROM 26. The choice of normal or economy printmode is made by a user selection from the panel 58. Thus, Nohata’s step S102 merely reads the position of the user operated mode switch and makes no determination of the threshold or level of print quality based on flexible criteria. Based on the switch position, Nohata uses one of two fixed thresholds.

In contrast the claimed invention uses the printing device (claim 1) or the processor (claim 14) to make a determination of level of print quality required for the received print job based on a set of flexible criteria. The flexible criteria may include user entered parameters as well other parameters for the received print job. The parameters, for example, may include the resolution needed for the received print job, the amount of media required for the print job, print mode as well as other print quality requirements. Based on a set of these parameters, the determination of level of quality required for the received print job is made by the print device or the processor. This level can vary from job to job. In contrast, Nohata merely chooses between two fixed thresholds for normal or economy mode.

Thus, Nohata lacks a determination a level of print quality for a print job that is based on a set of flexible criteria as recited in amended claims 1 and 14. Stewart does not teach or disclose this deficiency.

Nohata, unlike, Stewart, does not perform a recovery procedure. That is, Nohata's system responds to a failure to meet the threshold by putting the printer in an error processing mode at step S108, in which the print operation is terminated and the printer is manually serviced. See column 18, lines 12-19. Thus, Nohata does not perform a recovery operation. The Examiner admits that Nohata does not perform a recovery procedure, but contends that Stewart does. The Examiner then contends it would have been obvious to one of ordinary skill in the art at the time of the invention to perform maintenance as taught by Stewart in the maintenance of Nohata.

However, the suggested combination of Nohata and Stewart does not make a determination of level of print quality for a received print job based on a set of flexible criteria. Moreover, Stewart teaches away from any determination of level of print quality, because Stewart requires the printhead to be fully

functional to print so as to print at full quality. Essentially, the combination of Nohata and Stewart, upon detection that a printhead cannot pass a fixed threshold, automatically performs a recovery function to fully recover the printhead. If the printhead does not fully recover, then the combination system posts an error message and does not print the job. In the combination system, it is irrelevant that a partially functional printhead is actually capable of printing a job at a determined level of print quality that is lower than the full quality, because Stewart will stop the printing. Therefore, it is submitted that claims 1 and 14 are not obvious in view of the combination since it lacks the claimed determination of level of print quality required for the received print job based on a set of flexible criteria.

The Office Action suggestion to use Nohata in combination with Stewart is improperly based on the hindsight of Applicants' disclosure. Such hindsight reconstruction of the art cannot be the basis of a rejection under 35 U.S.C. 103. The prior art itself must suggest that modification or provide the reason or motivation for making such modification. In re Laskowski, 871 F.2d 115, 117, 10 USPQ 2d 1397, 1398-1399 (CAFC, 1989). "The invention must be viewed not after the blueprint has been drawn by the inventor, but as it would have been perceived in the state of the art that existed at the time the invention was made." Sensonics Inc. v. Aerosonic Corp. 38 USPQ 2d 1551, 1554 (CAFC, 1996), citing Interconnect Planning Corp. v. Feil, 774 F. 2d 1132, 1138, 227 USPQ 543, 547 (CAFC, 1985).

For the reasons set forth above, it is submitted that the rejection of amended claims 1 and 14 and their dependent claims under 35 U.S.C. 103(a) is erroneous and should be withdrawn.

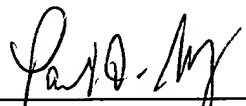
It is respectfully requested for the reasons set forth above that the objection to the specification be withdrawn, that the rejections under 35 U.S.C.

102(b) and 35 U.S.C. 103(a) be withdrawn, that claims 1-11, 13-23 and 25-27 be allowed and that this application be passed to issue.

For the reasons set forth above, it is submitted that this amendment places the application in condition for allowance. Accordingly, it is respectfully requested that this application be allowed and passed to issue. If this amendment is deemed to not place the application in condition for allowance, it is respectfully requested that it be entered for the purpose of appeal.

Respectfully Submitted,

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